CLAIMS

1. A transceiver, comprising:

a transceiver port for receiving and transmitting high data rate communication signals at radio frequency;

automatic frequency controlcontrol circuitry for adjusting the received radio frequency communication signals to a specified frequency channel;

down conversion circuitry coupled to the transceiver port coupled to receive the output of the automatic frequency control circuitry, the down conversion circuitry for down converting received radio frequency communication signals to base band frequency communication signals;

low pass filtering circuitry coupled to receive down converted frequency signals from the down conversion circuitry, the low pass filtering circuitry for removing a DC offset and low frequency interference;

high pass filtering circuitry coupled to receive down converted frequency signals, the high pass filtering circuitry for filtering interference signals that are at a frequency range that is higher than a specified frequency channel (the down converted base band channel);

dual received signal strength indication circuits for measuring power levels of signal and interference;

and variable gain amplification circuitry.

2. The transceiver of claim 1 wherein the automatic frequency controlcontrol circuitry comprises signal generation circuitry that provides phase shift keyed signals.

3. The transceiver of claim 2 wherein the phase shift keyed signal generation circuitry comprises quadrature phase shift keyed signal generation circuitry.

4. The automatic frequency control circuitry of claim 1 coupled to receiver port of the transceiver and to adjust the LO frequency to the desired RF channel.

5. The transceiver of claim 1 wherein the high pass filtering circuitry and variable gain amplification circuitry are combined to form high pass variable gain amplifier circuit.

6. The transceiver of claim 1 further comprises an up converter for converting base band signals to RF signals for transmission from the transceiver.

7. The transceiver of claim 1 further including RC calibration circuitry to automatically tune the on-chip channel selection low pass filters.

8. A transceiver, comprising;

a transceiver port for receiving and transmitting radio frequency communication signals;

an automatic frequency control circuit for adjusting the center frequency of a received RF signal;

circuitry for down converting the received RF signal; and

circuitry for removing a DC offset and low frequency interference.

9. The transceiver of claim 8 further including dual received signal indication circuits, which dual received signal indicator circuits are for measuring received signal power and received signal and interference power.

10. The transceiver of claim 8 further including high pass variable gain amplification circuitry.

11. The transceiver of claim 10 further including a second high pass variable gain amplifier circuit.

12. The transceiver of claim 11 further including a third high pass variable gain amplifier circuit.

13. The transceiver of claim 8 wherein the automatic frequency control circuitry includes quadrature phase shift keyed signal generation circuitry.

14. The transceiver of claim 8 wherein the automatic frequency control circuitry receives base band quadrature signals and produces an adjusted LO signal output from a local oscillator.

15. The transceiver of claim 8 further including filter circuitry for removing a DC offset.

16. The transceiver of claim 8 further including filter circuitry for removing low frequency interference.

17. The transceiver of claim 8 further including an up converter for up converting base band signals to radio frequency signals for transmission from the transceiver port.

18. The transceiver of claim 8 further including RC calibration circuitry for automatically tuning the on chip filters.

19. A method in a high data rate communication transceiver comprising:

receiving and amplifying wideband or high data rate radio frequency communication signals;

adjusting the LO frequency to align with the received RF signals;

down converting the received signals from the RF to base band; and

applying the down converted signals to low pass filters and amplifiers.

20. The method of claim 19 wherein the applying step removes the DC offset.

21. The method of claim 19 wherein the applying step removes low frequency interference.

22. The method of claim 19 further including the step of sensing the power level of the received signals.

23. The method of claim 19 further including the step of sensing the power level of the received signals and interference.

24. The method of claim 19 further including the step of setting a first amplification level based upon a ratio of signal-to-signal and interference power levels.

25. The method of claim 24 further including the step of setting a second amplification level based upon a ratio of signal-to-signal and interference power levels.

26. The method of claim 25 wherein the first and second amplification levels, when summed, provide a right amount of amplification.

27. The method of claim 19 further including the step of receiving center channel frequency information from a pilot signal and determining a difference between the received RF frequency and the desired frequency.

28. The method of claim 27 wherein the difference is determined by measuring an actual center frequency for the received signal.

29. A transceiver, comprising:

frequency control circuitry;

filtering circuitry; and

multiple high pass variable gain amplifier circuits coupled to receive the output of the filtering circuitry wherein the filtering circuitry removes low frequency interference and a DC offset and wherein the high pass variable gain amplification circuits provide signal amplification.

30. The transceiver of claim 29 wherein the frequency control circuitry includes circuitry for measuring a center channel frequency and for determining a difference between the measured center channel frequency and a specified center channel frequency.

31. The transceiver of claim 29 further including signal generation circuitry for generating quadrature phase shift keyed signals.

32. The transceiver of claim 29 further including a mixer for producing local oscillator output signals at a specified frequency.